Docket No. FE 6143

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Dominic BERTA, et al.

Serial No.: 10/577,270 Group Art Unit: 1796

Filed: April 26, 2006 Examiner: J. S. LENIHAN

Title: **POLYPROPYLENE COMPOSITION**

APPEAL BRIEF UNDER 37 C.F.R. §41.37

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

A Notice of Appeal was submitted to the U.S. Patent and Trademark Office in the above-captioned application on June 30, 2009. Accordingly, Applicant is filing this Appeal Brief by the due date of August 30, 2009.

In view of comments provided herein, Applicant respectfully believes all the pending rejections in the instant application should be withdrawn.

Table of Contents

Real Party in Interest

The real party in interest with respect to the current U.S. patent application and appeal submitted herein is Basell Poliolefine Italia s.r.l.

Related Appeals and Interferences

NONE

Status of the Claims

Claims 14-27 are currently rejected and are being appealed.

Status of the Amendments

Applicant mailed a response after final along with an amendment to claim 26 on June 30, 2009, and added new dependent claims 28 and 29, which further restricted the polydispersity index of component a) in independent claim 14. However, the Examiner stated in the Advisory Action mailed July 17, 2009 that the aforementioned amendment was not entered. Accordingly, Applicant's amendment mailed January 9, 2009 is the last amendment entered for the instant application.

Summary of the Claimed Subject Matter

In independent claim 1, Applicant is currently claiming a propylene polymer composition comprising components:

a) from 50% to 90% by weight of a propylene homopolymer or a propylene copolymer containing up to 5% by mol of derived units of C_2-C_{20} alpha-olefins, comprising:

   (i) a polydispersity index greater than 3;

   (ii) a melt flow rate, as measured at 230°C under a load of 2.16 kg, greater than 1 dg/min; and

   (iii) a fraction soluble in xylene at 25°C greater than >1%

b) from 5% to 25% by weight a copolymer of ethylene and one or more derived units of C_4-C_{20} alpha-olefins comprising:

   (i) a content of ethylene derived units higher than 50% by mol and lower than 92% by mol;

   (ii) an intrinsic viscosity higher than 1.2 dL/g and lower than 6 dL/g;

   (iii) a density ranging from 0.850 to 0.890 g/cm^3; and

   (iv) a crystallinity content, expressed as an enthalpy of fusion, lower than 62 J/g

c) from 5% to 25% by weight of a copolymer of propylene and ethylene comprising:

   (i) a content of propylene derived units higher than 50% by mol and lower than 92% by mol;

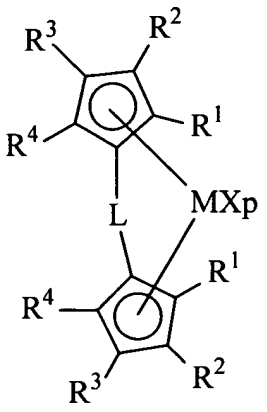
   (ii) an intrinsic viscosity higher than 2 dL/g and lower than 6 dL/g;

   (iii) a density ranging from 0.850 to 0.890 g/cm^3;

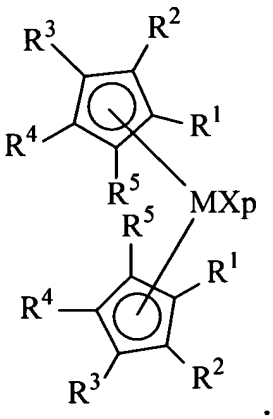
(iv) a value of a product of reactivity ratios r1xr2 lower than 2; and

(v) a crystallinity content, expressed as an enthalpy of fusion, lower than 45 J/g

wherein a weight ratio between component b) and the sum of component b) and component c) is equal to or higher than 0.5 and less than or equal to 0.9, and wherein component c) is obtained by a process comprising at least one metallocene compound of formula (I) or (II):



(I)



(II)

wherein

M is a transition metal belonging to group 4, 5 or to the lanthanide or actinide groups of the Periodic Table of Elements;

X, equal to or different from each other, are monoanionic sigma ligands selected from the group consisting of hydrogen, halogen, R^6, OR^6, $OCOR^6$, SR^6, NR^6_2 and PR^6_2, or two X can

optionally form a substituted or unsubstituted butadienyl radical or a OR'O group;

R' is a divalent radical selected from C_1-C_{20} alkylidene, C_6-C_{40} arylidene, C_7-C_{40} alkylarylidene and C_7-C_{40} arylalkylidene radicals;

R^6 is a linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl or C_7-C_{20} arylalkyl group, and optionally comprise at least one Si or Ge atom;

p is an integer equal to the oxidation state of M minus 2;

L is a divalent bridging group selected from C_1-C_{20} alkylidene, C_3-C_{20} cycloalkylidene, C_6-C_{20} arylidene, C_7-C_{20} alkylarylidene, or C_7-C_{20} arylalkylidene radicals optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements, and silylidene radicals comprising up to 5 silicon atoms such as $SiMe_2$, $SiPh_2$; and

R^1, R^2, R^3, R^4 and R^5, equal to or different from each other, are hydrogen, halogen, or linear or branched, saturated or unsaturated C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radicals, optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements; or two adjacent R^1, R^2, R^3, R^4 and R^5 form at least one substituted or unsubstituted 3-7 membered ring optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements. See page 1,

line 26 - page 2, line 22, and page 6, line 14 - page 8, line 2 in Applicant's specification.

Grounds of Rejection to be Reviewed on Appeal

Whether claims 14-27 are unpatentable under 35 U.S.C. §103(a) over Pelliconi, et al. (WO 03/051984) in view of Winter, et al. (U.S. Patent 5,145,819).

Whether claim 26 is indefinite under 35 U.S.C. 112, 2nd paragraph.

Argument

Rejection of Claims 14-27 Under 35 U.S.C. §103(a) to Pelliconi, et al. (WO 03/051984) in view of Winter, et al. (U.S. Patent 5,145,819)

Claims 14-27:

With respect to the currently appealed rejection of claims 14-27 under 35 U.S.C. §103(a) to WO 03/051984 (herein referred to as, "Pelliconi, et al.") in view of U.S. Patent 5,145,819 (herein referred to as, "Winter, et al."), Applicant responds as follows.

First and foremost, as outlined in Applicant's previous response, Applicant is currently claiming propylene polymer compositions comprising, in part, a specific propylene homopolymer or propylene copolymer as component (a); a specific ethylene copolymer as component (b); and a specific propylene/ethylene copolymer as component (c), wherein component (b) is present in a

specific weight ratio, and component (c) is obtained by using at least one metallocene compound of formula (I) or (II). In fact, as outlined in Applicant's specification on page 1, lines 2-3 and 26-27,

> The present invention relates to a propylene polymer composition having improved impact-stiffness balance.
>
> ******
>
> The applicant has surprisingly found that the impact-stiffness balance in a propylene composition can be further improved.

Accordingly, as noted in Applicant's specification, the currently claimed propylene polymer compositions unexpectedly comprise a better impact-stiffness balance.

In this regard, the currently claimed propylene polymer compositions comprise a better impact-stiffness balance since component (a), the propylene homopolymer or copolymer present from 50% to 90% by weight comprises, at the very least, a polydispersity index greater than 3. This is exemplified by Examples 2, 4, and 5 versus Comparative Examples 1 and 3 in Table 3 in Applicant's specification. In particular, Comparative Example 1 comprises 70% of component a-1 as component (a), which has a polydispersity index less than 3 (i.e., 2.4), while Example 2 comprises 70% of component a-2 as component (a), which has a polydispersity index greater than 3 (i.e., 3.8). Accordingly, Example 2 has much higher Young modulus, chord modulus, Izod at -30 °C, and Izod at -40 °C values than Comparative Example 1. Similarly, unexpected results can be

seen with Comparative Example 3 with respect to Examples 4 and 5, albeit with 80% of their respective component (a) present. However, Pelliconi, et al. and Winter, et al. are both completely silent in this regard (i.e., that the impact-stiffness of propylene polymer compositions can be improved by using 50% to 90% by weight of propylene homo- and co- polymers having a polydispersity index greater than 3). In fact, Pelliconi, et al. mainly deals with producing polyolefin compositions with improved optical and whitening properties, while Winter, et al. mainly relates to 2-substituted bisindenyl metallocenes.

In response to Applicant's unexpected results, the Examiner states in the Advisory Action of July 17, 2009, that,

> Regarding applicant's claim that unexpected results are obtained, the examiner notes that the allegedly unexpected results are not commensurate in scope with the instant claims. Applicant cites examples 2, 4, and 5 as evidence of unexpected results; Example 2 recites a composition comprising 70% component A, 20% component B, and 10% component C. Examples 4 and 5 both disclose compositions comprising 80% A, 13.33% B, and 6.67% C. The compositions disclosed in the cited examples therefore are not commensurate with the claimed composition, which may contain 50-90% A, 5-25% B, and 5-25% C. Furthermore, the examiner notes that, based on the data presented on pages 18-19 of the specification for the polymer components used, applicant has not demonstrated that the allegedly unexpected results may be obtained commensurate with the claimed ranges of properties such as polydispersity, melt flow rate, xylene soluble fractions, ethylene/propylene content, etc. which are used to define components A, B, and C in the claimed composition.

However, the Examiner's summarily dismissal of Applicant's unexpected results as not being commensurate in scope with the

currently claimed compositions is clearly improper. As noted by the Examiner, all of the Examples (i.e., 2, 4, and 5) fall squarely within Applicant's currently claimed compositions. In this regard, the Examiner has not indicated any reasoning as to *why* such results are deemed not to be commensurate in scope with Applicant's currently claimed compositions. In other words, the Examiner has not proffered any evidence or well-established technical reasoning to rebut Applicant's unexpected results as not being commensurate in scope; rather the Examiner has dismissed the results out of hand, which is clearly improper. To maintain such a dismissal of the evidence before the Examiner, the Examiner should be required to provide Applicant with some sort of evidence or substantial line of technical reasoning as to *why* it is believed that the unexpected results outlined in Applicant's originally filed specification would not be demonstrated over the range of compositions currently claimed by Applicant. However, to date, the Examiner has not provided Applicant with any such evidence or technical reasoning.

Moreover, if the Examiner is allowed to summarily dismiss Applicant's unexpected results without any evidence or technical line of reasoning as to *why* the current results are supposedly inadequate, as done in the instant case, Applicant will be unduly burdened with having to produce an undetermined amount of additional examples, which are extremely time consuming and costly to produce. Yet, this is clearly against public policy. In fact, Applicant is allowed to reasonably claim what he/she feels is their invention,

including embodiments that would reasonably fall within Applicant's invention. However, the Examiner has not provided any evidence or technical reasoning as to *why* it is believed the unexpected results demonstrated in Examples 2, 4, and 5 would not be present over the range of compositions currently claimed by Applicant, especially since all of the aforementioned examples clearly fall squarely within the currently claimed compositions, as noted by the Examiner. Accordingly, Applicant respectfully believes the Examiner's immediate dismissal of Applicant's unexpected results, without any evidence or technical line of reasoning to support the Examiner's basis for dismissing the results, is clearly improper.

Furthermore, with respect to the original examples in Applicant's specification, the Examiner states in the Advisory Action dated July 17, 2009,

> . . . based on the data presented on pages 18-19 of the specification for the polymer components used, applicant has not demonstrated that the allegedly unexpected results may be obtained commensurate with the claimed ranges of properties such as polydispersity, melt flow rate, xylene soluble fractions, ethylene/propylene content, etc. which are used to define components A, B, and C in the claimed composition.

However, the properties outlined above by the Examiner were claimed in the original claims filed in the International Application (i.e., PCT phase), as well as the original claims filed in the U.S. when the application entered the national phase. Accordingly, Applicant believes it is clear that the embodiments highlighted as examples would clearly encompass these properties. After all, the examples

filed in the application, which have not been amended, are embodiments of the invention, with the claims determining the invention. Additionally, none of these properties have been amended in the claims in such a way as to raise an issue as to whether the examples do, in fact, have these properties. Accordingly, Applicant respectfully believes the Examiner's argument above is unreasonable and misguided, and should be withdrawn.

Therefore, in light of the above and given Applicant's unexpected results, Applicant respectfully believes the instant rejection to Pelliconi, et al. in view of Winter, et al. should be withdrawn.

Notwithstanding, Applicant responds as follows with respect to the other issues raised by the Examiner in the Advisory Action dated July 17, 2009. In particular, the Advisory Action also states,

> The fact that Pelliconi cites multiple references as disclosing catalysts which may be used in practicing the invention of WO 03/051984 does not negate the fact that Pelliconi specifically states that the bridged metallocene catalysts of Winters, US5145819, are suitable for use in preparing the disclosed composition (see page 5, lines 27-32). The examiner maintains the position that the explicit reference by Pelliconi to Winters renders the use of the catalysts disclosed by Winters to be prima facie obvious to one of ordinary skill in the art.
>
> Regarding Pelliconi's preference for Ziegler Natta catalysts, it has been held that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments, see Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.). Also, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re

> Susi 440 F.2d 442, 169 USPQ (CCPA 1971). As noted above, Pelliconi specifically states that the metallocene catalysts of Winters may be used in practicing the invention of WO 03/051984. The fact that Pelliconi prefers the use of Ziegler Natta catalysts does not overcome the broader disclosure that the metallocene catalyst of Winters may be used.
>
> The examiner further notes that Pelliconi specifically states that the metallocene catalysts are particularly useful for the preparation of copolymers (a) and (b) (Page 5, last line, to Page 6, line 1)., which correspond to components (B) and (C) of the claimed composition. As Pelliconi teaches that the individual components may be prepared in separate reactors and then blended together (Page 6, lines 2-9). In light of Pelliconi's statement that the metallocene catalysts are particularly suited for preparing copolymers (a) and (b), it would have been obvious to modify the composition of Pelliconi by using the catalysts disclosed by Winters to prepare compolymers (a) and (b), resulting in a final composition wherein component 1 of Pelliconi is prepared using a Ziegler Natta catalyst and component 2, comprising copolymers (a) and (b), is made with a metallocene catalyst. As the prior art renders obvious a composition comprising polymers having similar monomeric content made using the same catalysts, the examiner maintains that one of ordinary skill in the art would reasonably expect that the properties of the prior art composition would not be materially different from those of the claimed composition.

However, Applicant respectfully traverses the Examiner's reasoning outlined above in the Advisory Action. First and foremost, as previously noted in Applicant's previous response, Pelliconi, et al. discloses polyolefin compositions comprising components 1) and 2), wherein components 1) and 2) are preferably prepared by Zeigler-Natta catalysts. In fact, page 3, lines 25-30 of Pelliconi, et al. discloses,

> Such polymerization is preferably carried out in the presence of stereospecific **Ziegler-Natta catalysts. An**

> **essential component** of said catalysts is a solid catalyst component comprising **a titanium compound having at least one titanium-halogen bond,** and an electron-donor compound, both supported on a magnesium halide in active form. Another essential component (co-catalyst) is an organoaluminum compound, such as an aluminum alkyl compound. (Emphasis added)

Accordingly, Pelliconi, et al. discloses the polyolefin compositions are preferably obtained by using a Ziegler-Natta catalyst for producing each individual component. This is further evidenced by the fact that all thirteen (13) working examples in Pelliconi, et al. are produced used a Ziegler-Natta catalyst.

Notwithstanding this, Applicant respectfully believes the Examiner has not explained *why*, absent Applicant's specification and currently pending claims, one of ordinary skill in the art would have selectively plucked the currently relied upon metallocene compounds of Winter, et al. from the myriad of other catalysts that may be used from the disclosure of Pelliconi, et al. In fact, the full disclosure in Pelliconi, et al. regarding catalysts that may be used in lieu of the preferred Ziegler-Natta catalysts states,

> Other catalysts that may be used in the process according to the present invention are metallocene-type catalysts, as described in USP 5,324,800 and EP-A-0 129 368; particularly advantageous are bridged bis-indenyl metallocenes, for instance as described in USP 5,145,819 and EP-A-0 485 823. Another class of suitable catalysts are the so-called constrained geometry catalysts, as described in EP-A-0 416 815 (Dow), EP-A-0 420 436 (Exxon), EP-A-0 671 404, EP-A-0 643 066 and WO 91/04257. These metallocene compounds may be used in particular to produce the copolymers (a) and (b).

In particular, various other catalyst types are described in this

section of Pelliconi, et al., including those that clearly fall outside the metallocene compounds of formula (I) and (II). In this regard, the Examiner has not addressed *why* one would have selectively plucked the relied upon metallocenes of Winter, et al. from the myriad of other catalysts disclosed in Pelliconi, et al., absent Applicant's express teaching to do so. However, this is the Examiner's initial burden to establish a *prima facie* case of obviousness.

Additionally, in the same vein as above, the Examiner has also not explained *why*, absent Applicant's specification and currently pending claims, one of ordinary skill in the art would have selectively plucked the metallocene compounds of Winter, et al., in lieu of all the other catalysts one could have selected from Pelliconi, et al., to specifically produce component (c) as currently claimed by Applicant. In order to try and address this deficiency, the Examiner states in the Advisory Action of July 17, 2009,

> The examiner further notes that Pelliconi specifically states that the metallocene catalysts are particularly useful for the preparation of copolymers (a) and (b) (Page 5, last line, to Page 6, line 1)., which correspond to components (B) and (C) of the claimed composition.
>
> ******
>
> In light of Pelliconi's statement that the metallocene catalysts are particularly suited for preparing copolymers (a) and (b), it would have been obvious to modify the composition of Pelliconi by using the catalysts disclosed by Winters to prepare compolymers (a) and (b), resulting in a final composition wherein component 1 of Pelliconi is prepared using a Ziegler

> Natta catalyst and component 2, comprising copolymers (a) and (b), is made with a metallocene catalyst.

However, again, the Examiner has not explained *why* one of ordinary skill would have proceeded in this fashion by specifically choosing metallocene catalysts from Winter, et al., as opposed to the myriad of other catalysts disclosed in Pelliconi, et al., to specifically produce component (c) as currently claimed by Applicant, **absent Applicant's specification and currently pending claims**, especially in light of the unexpected benefits afforded to Applicant's currently claimed compositions as discussed *supra*. In fact, Applicant respectfully believes the Examiner is clearly using Applicant's currently claimed compositions and specification as a blueprint in an attempt to try and piece together a mosaic of teachings in the prior art to try and arrive at Applicant's currently claimed compositions. However, this is fundamentally improper, and such an analysis is clearly based on hindsight reasoning. The issue before the Examiner is whether one of ordinary skill in the art would have, at the time of filing Applicant's application, selectively plucked the specific metallocene catalysts of Winter, et al. from the myriad of catalysts disclosed by Pelliconi, et al., in which Pelliconi, et al. clearly discloses Ziegler-Natta catalysts are the preferred catalysts to produce all three components, to produce component (c) as currently claimed by Applicant, absent Applicant's specific teaching to do so, especially in light of Applicant's unexpected results discussed *supra*.

Applicant respectfully believes, when viewing the facts of this case as a whole, one of ordinary skill in the art would not have proceeded as purported by the Examiner, nor would one of ordinary skill in the art have expected to arrive at Applicant's currently claimed compositions having an unexpectedly better impact-stiffness balance.

For all the reasons outlined above, Applicant respectfully believes Applicant's unexpected results are, in fact, commensurate in scope with the currently claimed compositions and should be given proper weight, and that the instant rejection to Pelliconi, et al. in view of Winter, et al. should be withdrawn. Therefore, Applicant respectfully requests the Board to overturn the instant rejection.

Rejection of Claim 26 Under 35 U.S.C. §112, 2nd Paragraph

Claim 26:

Applicant submitted an amendment on June 30, 2009 to obviate the indefiniteness rejection of claim 26. However, the amendment was not entered due to the addition of two new dependant claims. Additionally, the Advisory Action of July 17, 2009 states that the proposed amendment to claim 26 submitted on June 30, 2009 would overcome the rejection. Accordingly, Applicant respectfully believes the amendment filed June 30, 2009 should be entered in part (i.e., enter the amendment to claim 26, while excluding the addition of new claims 28 and 29), since the merit of the rejection outlined in the Office Action of March 30, 2009 is uncontested, and the

Examiner has indicated such an amendment would obviate the instant rejection. Applicant is aware of MPEP §714.20, but contends no confusion will be made in the record by entering the amendment only to claim 26 in order to obviate the current rejection. In fact, Applicant respectfully contents that by entering the amendment to claim 26 would further the public policy of expediting the prosecution of applications, while at the same time, not waste the time and energy of the BPAI to consider the merit of a rejection that has substantially been overcome. As such, Applicant respectfully believes the amendment to claim 26 presented on June 30, 2009 should be entered, thus rendering the merit of the currently rejection moot.

In view of the forgoing, Applicant respectfully believes the current rejections should be withdrawn, and the instant application should be allowed to proceed to grant.

Respectfully submitted,

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Signature _____ Date August 31, 2009

Claims Appendix

14. A propylene polymer composition comprising components:

a) from 50% to 90% by weight of a propylene homopolymer or a propylene copolymer containing up to 5% by mol of derived units of C_2-C_{20} alpha-olefins, comprising:

(i) a polydispersity index greater than 3;

(ii) a melt flow rate, as measured at 230°C under a load of 2.16 kg, greater than 1 dg/min; and

(iii) a fraction soluble in xylene at 25°C greater than >1%

b) from 5% to 25% by weight a copolymer of ethylene and one or more derived units of C_4-C_{20} alpha-olefins comprising:

(i) a content of ethylene derived units higher than 50% by mol and lower than 92% by mol;

(ii) an intrinsic viscosity higher than 1.2 dL/g and lower than 6 dL/g;

(iii) a density ranging from 0.850 to 0.890 g/cm^3; and

(iv) a crystallinity content, expressed as an enthalpy of fusion, lower than 62 J/g

c) from 5% to 25% by weight of a copolymer of propylene and ethylene comprising:

(i) a content of propylene derived units higher than 50% by mol and lower than 92% by mol;

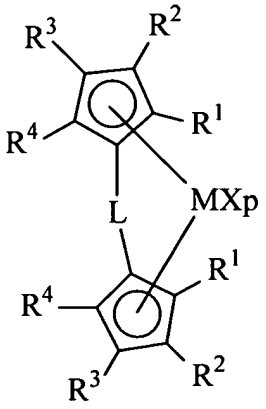
(ii) an intrinsic viscosity higher than 2 dL/g and lower than 6 dL/g;

(iii) a density ranging from 0.850 to 0.890 g/cm^3;

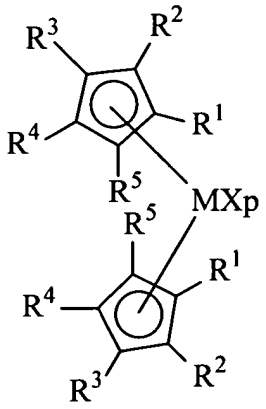
(iv) a value of a product of reactivity ratios r1xr2 lower than 2; and

(v) a crystallinity content, expressed as an enthalpy of fusion, lower than 45 J/g

wherein a weight ratio between component b) and the sum of component b) and component c) is equal to or higher than 0.5 and less than or equal to 0.9, and wherein component c) is obtained by a process comprising at least one metallocene compound of formula (I) or (II):



(I)



(II)

wherein

M is a transition metal belonging to group 4, 5 or to the lanthanide or actinide groups of the Periodic Table of Elements;

X, equal to or different from each other, are monoanionic

sigma ligands selected from the group consisting of hydrogen, halogen, R^6, OR^6, $OCOR^6$, SR^6, NR^6_2 and PR^6_2, or two X can optionally form a substituted or unsubstituted butadienyl radical or a OR'O group;

R' is a divalent radical selected from C_1-C_{20} alkylidene, C_6-C_{40} arylidene, C_7-C_{40} alkylarylidene and C_7-C_{40} arylalkylidene radicals;

R^6 is a linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl or C_7-C_{20} arylalkyl group, and optionally comprise at least one Si or Ge atom;

p is an integer equal to the oxidation state of M minus 2;

L is a divalent bridging group selected from C_1-C_{20} alkylidene, C_3-C_{20} cycloalkylidene, C_6-C_{20} arylidene, C_7-C_{20} alkylarylidene, or C_7-C_{20} arylalkylidene radicals optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements, and silylidene radicals comprising up to 5 silicon atoms such as $SiMe_2$, $SiPh_2$; and

R^1, R^2, R^3, R^4 and R^5, equal to or different from each other, are hydrogen, halogen, or linear or branched, saturated or

unsaturated C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radicals, optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements; or two adjacent R^1, R^2, R^3, R^4 and R^5 form at least one substituted or unsubstituted 3-7 membered ring optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements.

15. The propylene polymer composition according to claim 14, wherein component a) further comprises no detectable 2,1 regioerrors in a ^{13}C NMR spectrum recorded at a 300 MHz instrument.

16. The propylene polymer composition according to claim 14, wherein component b) further comprises a product of reactivity ratio r1xr2 lower than 5.

17. The propylene polymer composition according to claim 14, wherein component a) ranges from 50% to 80% by weight, component b) ranges from 25% to 9% by weight, and component c) ranges from 25% to 11% by weight.

18. The propylene polymer composition according to claim 14, wherein component b) comprises from 5% to 40% by mol. of the derived units of C_4-C_{20} alpha-olefins.

19. The propylene polymer composition according to claim 14, wherein the intrinsic viscosity of component b) is higher than 1.25 dL/g and lower than 3.0 dL/g.

20. The propylene polymer composition according to claim 14, wherein the enthalpy of fusion of component b) is lower than 50 J/g.

21. The propylene polymer composition according to claim 14, wherein component b) comprises 1-butene or 1-octene.

22. The propylene polymer composition according to claim 14, wherein component c) comprises from 50% to 80% by mol of propylene derived units, and from 50% to 20% by mol of ethylene derived units.

23. The propylene polymer composition according to claim 14, wherein the intrinsic viscosity of component c) is preferably higher than 2 dL/g and lower than 4 dL/g.

24. The propylene polymer composition according to claim 14, wherein the value of a product of reactivity ratios r1xr2 of component c) is lower than 1.8.

25. The propylene polymer composition according to claim 14, wherein the enthalpy of fusion of component c) is lower than 35 J/g.

26. The propylene polymer composition according to claim 14, wherein component b) is obtained by polymerizing ethylene and one or more C_2-C_{20} alpha olefins in presence of a metallocene compound comprising at least one cyclopentadienyl moiety which is π-bonded to a central metal, and component c) is obtained by polymerizing propylene and ethylene in presence of a metallocene compound comprising at least one cyclopentadienyl moiety which is π-bonded to a central metal.

27. The propylene polymer composition according to claim 14, wherein two adjacent R^1, R^2, R^3, R^4, and optionally R^5 form at least one substituted or unsubstituted 3-7 membered ring optionally comprising at least one heteroatom belonging to groups 13-17 of the Periodic Table of Elements, the substituted or unsubstituted 3-7 membered ring forming with the cyclopentadienyl moiety indenyl; mono-, di-, tri- and tetra-methyl indenyl; 2-methyl-4-(4'-tert-butylphenyl)indenyl; 2-isopropyl-4-(4'-tert-butylphenyl)indenyl; 2-methyl indenyl; 3-^{t}butyl-indenyl; 2-isopropyli-4-phenyl indenyl; 2-methyl-4-phenyl indenyl; 2-methyl-4,5 benzo indenyl; 3-trimethylsilyl-indenyl; 4,5,6,7-tetrahydroindenyl; fluorenyl; 5,10-dihydroindeno[1,2-b]indol-10-yl; N-methyl- or N-phenyl-5,10-dihydroindeno [1,2-b]indol-10-yl; 5,6-dihydroindeno[2,1-b]indol-6-yl; N-methyl-or N-phenyl-5,6-dihydroindeno[2,1-b]indol-6-yl; azapentalene-4-yl; thiapentalene-4-yl; azapentalene-6-yl; thiapentalene-6-yl; and mono-, di- and tri-methyl-azapentalene-4-yl; 2,5-dimethyl-cyclopenta[1,2-b:4,3-b']-dithiophene.

Evidence Appendix

NONE

Related Proceedings Appendix

NONE